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10/576,843	03/08/2007	**Alan Olstein**	21001.002	7439

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EXAMINER	
HAQ, SHAFIQUL	
ART UNIT	**PAPER NUMBER**
1641	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/576,843	OLSTEIN, ALAN	
	Examiner	Art Unit	
	SHAFIQUL HAQ	1641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 September 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-12,17,18 and 21-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4-12,17-18 and 21-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of claims

1. Applicants' amendments to claims and to specification filed 9/2/08 is acknowledged and entered.

2. Claim 1, 4-12, 17-18 and 21-30 are pending and are examined on merits.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in Graham v. John Deere Co., 383 U.S. 1,148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

    1. Determining the scope and contents of the prior art.
    2. Ascertaining the differences between the prior art and the claims at issue.
    3. Resolving the level of ordinary skill in the pertinent art.
    4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1, 4-8, 10-12, 17-18, 21-25, 27-29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Basbøll *et al* (US 5,648,227) in view of Bronstein *et al* (US 6,586,196 B1), Chen *et al* (US 6,355,449 B1), Giaever (US 3,970,518) and Gruttner *et al* (J. Magnetism and Magnetic Materials 2001).

Basbøll *et al* in a method of detecting microorganism in a sample disclose capturing the microorganisms in the sample with an antibody which is bound to a solid phase and detecting the microorganism using any method per se, including detection directly on the solid phase (column 3, lines 49-55). Basbøll *et al* disclose that the antibody coated solid surface may be microparticles, microwell, a test tube, a dipstick, foams, meshes, membranes or other materials commonly used in diagnostic procedures (i.e. antibody adhered to a surface) (column 2, lines 63-67 and column 3, lines 63-67). Basbøll *et al* disclose *Listeria monocytogenes* (i.e. a *Listeria spp.*) (see claim 6) as a specific microorganism to be detected using an anibody specific to *Listeria* cells (i.e. capable of capturing *Listeria spp.* cells; see claim 8).

Basbøll *et al* disclose that the captured microorganism (e.g. *Listeria spp.*) on the solid phase (e.g. macroparticles) (column 3, lines 54-55) may be detected by using a second antibody labeled with horseradish peroxidase (e.g. ELISA method) (column 5, lines 35-39; column 7, lines 52-65 and column 10, lines 41-64) but, however, fail *to* disclose detection of the immobilized Listeria spp. cells directly using a substrate for beta-glucosidase and an enhancer molecule and the microparticle is a magnetic particle or a magnetic particle coated with silica, dextran or silica-dextran.

Bronstein *et al* disclose detection of endogenous enzyme produced cells using a substrate for the enzyme (column 1, lines 10-16) wherein the detection involves incubation of the cells producing an enzyme with the enzyme substrate and an

enhancer and detection of the chemiluminescent produced by degradation of the substrate by the endogenous enzyme (Column 3, line 60 to column 4, line 5 and column 11, lines 59-67). Bronstein *et al* disclose the endogenous enzyme useful in the invention comprise proteins having enzymatic activity that degrades a substrate to produce a light signal (column 6, lines 1-4). Several enzymes including beat-glucosidase and corresponding substrates are disclosed (column 6, lines 19-64). Brostein *et al* also disclose beta-glucosidase and specific substrate for the enzyme which comprises dioxetane (column 6, lines 56-61). Bronstein *et al* further disclose that the chemiluminescent 1,2 dioxetane substrate provides high sensitivity in chemiluminescent detection (column 1, lines 50-53) and the chemiluminescent assay provides superior alternative to traditional calorimetric, fluorescent and radioisotopic detention methods (column 1, lines 53-56). Bronstein *et al* also disclose that the use of 1,2 dioxetane substrates provides sensitive, versatile and facile chemiluminescent assay systems for quantification of endogenous cellular enzymes (column 4, lines 1-5).

Chen *et al* disclose that Listeria spp. (e.g. Listeria monocytogenes) possess β-glucosidase activity (column 11, lines 17-18) that can be detected using a β-glucosidase substrates (column 3, lines 50-52).

Giaever discloses magnetic particle coated with antibody for separation and detection of bacterial and other cells (see abstract and column 1, lines 5-10). Giaever discloses that magnetic particle is very useful because antibody layer provides a large and widely-distributed surface area for capture of bacterial and

other cells (see abstract) and the captured cells from a mixed population can be readily concentrated/separated by applying magnetic field (column 1, lines 35-55; column 2, lines 30-49 and claim 1).

Gruttner *et al* disclose magnetic particles with improved properties useful for applications in diagnostics, moeculear biology and biomedicine (see abstract). Gutter *et al* disclose that Magnetic particle coated with silica are very efficient to adsorb biomolecules (e.g. proteins, DNA etc.) on their surface (page 1, third paragraph of right column). Gruttner *et al* disclose that magnetic particle coated with silica drastically increases coating ability of a protein (page 5, lines 1-3 of left column). Gruttner et al further disclose magnetic nanoparticle with a silicon fortified dextran matrix (i.e. silican and dextran coated particle) with increased protein binding ability (page 5, paragraph 4). Gruttner *et al* also disclose that the silica-fortified magnetic nanoparticles have improved mechanical properties for analytical applications of the magnetic particles with a high diffusion speed when compared to non-modified dextran nanoparticles (see paragraph 4).

Therefore, given the above facts that cells possessing an enzymatic activity can be detected directly using a substrate for the enzyme (Bronstein *et al*), which requires less reaction steps than conventional ELISA methods (i.e. ELISA requires additional labeling with second labeled antibody) and *Listeria spp.* possesses a β-glucosidase activity (Chen *et al*) that can be detected with a sensitive 1,2 dioxetane substrate and an enhancer (Bronstein *et al*), one of ordinary skill in the art at the time the invention was made, would have been motivated to detect the immobilized

Listeria spp. of Basbøll *et al* directly on the solid surface using the β-glucosidase substrate and the enhancer as taught by Bronstein *et al*, with the expectation of detection of the immobilized *Listeria* microorganism quickly (i.e. with less steps) with high sensitivity, with a reasonable expectation of success. In addition the motivation to combine the references also comes from the disclosure that the solid phase bound *Listeria spp*. may be detected by any method, including detection directly on the solid phase (Basbøll *et al*; column 3, lines 49-55) and from the disclosure that enzymatic activity of microorganisms can be detected directly using a highly sensitive 1,2 dioxetane substrates and an enhancer (Bronstein *et al*). In addition, one of ordinary skill in the art at the time of the invention would have a reasonable expectation of success in detecting the immobilized *Listeria monocytogenes* cells of Basbøll *et al* with the 1, 2 dioxetane substrate of Bronstein *et al*, because *Listeria monocytogenes* cells posses a β-glucosidase activity (Chen *et al*) and Bronstein *et al* disclose specific substrates for β-glucosidase enzyme which is highly sensitive (column 6, lines 56-61). Further, given the fact that magnetic particle carrying specific recognition molecules are very useful for quick separation of captured cells from a mixed cell population (Giaever *et al*), it would have been obvious to one of ordinary skill in the art at the time the invention was made, to substitute the microparticle of Basbøll *et al* with equivalent magnetic particles of Giaver *et al* or Gruttner *et al* for quick separation Listeria cells from other cells in the sample using magnetic field for subsequent detection and analysis, with a reasonable expectation of success. Since, silica coated and silica-dextran coated magnetic particles are

disclosed to have high binding ability for proteins (e.g. antibody) that have improved mechanical and analytical properties (Gruttner *et al*), it would also be obvious to one of ordinary skill in the art at the time of the invention, to try other known equivalent magnetic particles such as the silica and silica-dextran coated particles of Grutnner for obtaining a magnetic particle suitable for binding of *Listeria* antibody that provides optimal separation and detection of *Listeria* cells.

With regard to the recitation "wherein steps (a) through (e) are performed within approximately 90 minutes", Basbøll *et al* in view of Bronstein *et al* and Chen *et al* teach direct and sensitive detection of listeria cells by detection of β-glucosidase activity of listeria *spp* using a substrate (e.g. 1,2 dioxetane) which requires less reaction steps than conventional ELISA methods (i.e. ELISA requires additional labeling with second labeled antibody) and Giaever *et al* teach quick and efficient separation of captured cells from a mixed cell population using magnetic particle (column 1, lines 35-55; column 2, lines 30-49 and claim 1) and the combined teaching would obviously require less time for detection of listeria *spp* than detection by conventional detection method and thus the range (i.e. within 90 minutes or within 60 minutes to perform the steps) would be obvious to one of ordinary skill in the art. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

With regard to claims 4-6, use of magnetic particle comprising dextran and silica is taught by the combined teaching of Giaever and Gruttner *et al*, as described above.

With regard to claim 7, Basbøll *et al* disclose using antibody specific for a *Listeria* species (see claim 6).

Regarding claim 8, Bronstein *et al* disclose beta-glucosidase and a substrate for the enzyme comprising 1,2-dioxetane (column 6, lines 56-60).

Regarding claims 10-12, Bronstein *et al* disclose several enhancer molecules (column11, line 59 to column 14, line 60) which reads on the enhancer molecules of claims 10-12 {As for example, compare formula (II) and (III) of Bronstein with the enhancer of Formula I and formula II of instant claim 12}

As for claim 17, Basbøll *et al* disclose washing step to remove non-specifically bound material after incubation of the antibody coated solid phase with the sample comprising microorganism (column 3, line 65 to column 4, line 1), which reads on step of separating the surface from the sample after step (b) and prior to step (c) of claim 17.

As for kit claims 18, 21-25 and 27-29, Bronstein et al disclose a kit comprising solid surface bound to microorganism specific antibody for the detection (column 5, lines 10-15). However, the packaging of components in kit form is a well-known obvious expedient for ease and convenience in assay performance and once a method has been established, one skilled in the art would clearly consider compiling in a kit format and change/modify different components of the kit to best suit the

assay and with regard to claim 30, the performance of the steps within approximately 60 minutes would be obvious for the same reason as described above that is the combined teaching would obviously require less time for detection of listeria *spp* than detection by conventional detection method and thus the range (i.e. within 60 minutes to perform the steps) would be obvious to one of ordinary skill in the art.

6. Claims 9 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Basbøll *et al* (US 5,648,227) in view of Bronstein *et al* (US 6,586,196 B1), Chen *et al* (US 6,355,449 B1), Giaever (US 3,970,518) and Gruttner *et al* (J. Magnetism and Magnetic Materials 2001) as described above and further in view of Giri *et al* (US 6,767,716 B2).

See the above teaching of Basbøll *et al* in view of Bronstein *et al*, Chen *et al*, Giaever and Gruttner *et al* for chemiluminescent detection of microorganisim (e.g. *listeria spp*.) using antibody bound to a solid phase and wherein the solid phase may be a magnetic particle. The above combination teach detection of *Listeria* cells by directly detecting an endogenous enzyme produced by the cells using a substrate for the enzyme (column 1, lines 10-16) wherein the endogenous enzyme is beta-glucosidase and corresponding substrates comprises chemiluminescent 1,2 dioxetane.

The above teaching, however, differ from the instant application in failing to disclose that the substrate for beta glucosidase comprises a compound selected form the group consisting of {(4-(2-phenoxyethoxy)-4-(3-phosphoryloxy-4-

chlorophenyl)}spiro{1,2-dioxetane-3, 13'-tricyclo{7.3.1.0 ^{2,7}}tridec-2,7-ene} and salts thereof.

Giri discloses a highly sensitive chemiluminescent 1,2-dioxetane system which can achieve a detection level as low as attogram of enzyme. (column 1, lines 22-25). Giri discloses that the invention enables the detection of galactosidase, alkaline phosphatase and other enzymes at attogram level and comprises a stable 1,2 dioxetane derived from a spiro-fused ketone with carbon-carbon double bond and a polymeric enhancer (see the reaction scheme in column 9 and column 12, lines 26-29). Giri discloses several 1,2-dioxetane compounds (column 14, lines 29-52) and a particular compound disclosed as useful for the practice of his invention is {(4-(2-phenoxyethoxy)-4-(3-phosphoryloxy-4-chlorophenyl)}spiro{1,2-dioxetane-3,13'-tricyclo{7.3.1.0 ^{2,7}}tridec-2,7-ene} (see claims 2 and 5), which is the same as the compounds of claims 9 and 26 of instant application.

Therefore, given the above fact that the chemiluminescent system of Giri is highly sensitive, which can detect enzymes at an attogram level, it would have been obvious to one of ordinary skill in the art at the time the invention was made to try the highly sensitive chemiluminescent system of Giri for the detection of immobilized *Listerial* cells of Basbøll *et al*, with the expectation of improving the detection sensitivity, with a reasonable expectation of success because Giri discloses that the system can be used for detection of other enzymes besides beta-galactosidase and alkaline phosphatase (column 12, lines 26-29).

As for kit claim 26, Bronstein et al disclose components in a kit (column 5, lines 10-15). However, the packaging of components in kit form is a well-known obvious expedient for ease and convenience in assay performance and once a method has been established, one skilled in the art would clearly consider compiling in a kit format and change/modify different components of the kit to best suit the assay.

Response to Applicant's argument

7. Applicant's arguments and amendments filed 9/2/08 have been fully considered and are persuasive to overcome the rejections of 2/27/08 under 35 U.S.C. 112 second paragraph in view of the cancellation of claims 13-16 but are not persuasive to overcome the rejections under 35 USC 103 (a). However, applicant amendments necessitated applying new grounds of rejections under 35 U.S.C. 103 (a), which are described in this office action.

With regard to combining the references of Basboll *et al*, Bronstein *et al*, Chen et al, Giaver and Gruttner et al, Applicants argued that the combination of the references is improper because there is not motivation to combine them. Applicants argued that there is nothing in the Brostein *et al* reference to suggest detecting the presence of a microorganism using the β-glucosidase substrate and enhance and there is no mention of detecting any microorganism, including *Listeria*, in Bronstein *et al*.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed

invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See In re Fines, 837 F.2d 1071, 5USPQ2d 1596 (Fed. Cir. 1988) and In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir.1992). In this case, Basbøll *et al* clearly teach capturing the microorganisms in the sample with an antibody which is bound to a solid phase and detection of the bound microorganism, including detection directly on the solid phase (column 3, lines 49-55). Basbøll *et al* teach coating of antibody on solid surface such as microparticles (column 2, lines 63-67 and column 3, lines 63-67). Basbøll *et al* further teach *Listeria monocytogenes* (i.e. a *Listeria spp.*) (see claim 6) as a specific microorganism to be detected using an anibody specific to *Listeria* cells (i.e. capable of capturing *Listeria spp.* cells; see claim 8). Basbøll *et al* disclose that the captured microorganism (e.g. *Listeria spp.*) on the solid phase (e.g. macroparticles) (column 3, lines 54-55) may be detected by using a second antibody labeled with horseradish peroxidase (i.e. with a detectable label) (column 5, lines 35-39; column 7, lines 52-65 and column 10, lines 41-64). Bronstein *et al* disclose detection of enzymes produced by the cells using a substrate for the enzyme (column 1, lines 10-16) wherein the detection involves incubation of the cells producing an enzyme with the enzyme substrate and an enhancer and detection of the chemiluminescent produced by degradation of the substrate by the endogenous enzyme (Column 3, line 60 to column 4, line 5 and column 11, lines 59-67). Bronstein *et al* disclose the endogenous enzyme useful in the invention comprise proteins having enzymatic activity that degrades a substrate

to produce a light signal (column 6, lines 1-4). Several enzymes including beat-glucosidase and corresponding substrates are disclosed (column 6, lines 19-64). Brostein *et al* also disclose beta-glucosidase and specific substrate for the enzyme which comprises dioxetane (column 6, lines 56-61). Bronstein *et al* further disclose that the chemiluminescent 1,2 dioxetane substrate provides high sensitivity in chemiluminescent detection (column 1, lines 50-53) and the chemiluminescent assay provides superior alternative to traditional calorimetric, fluorescent and radioisotopic detention methods (column 1, lines 53-56). Bronstein *et al* also disclose that the use of 1,2 dioxetane substrates provides sensitive, versatile and facile chemiluminescent assay systems for quantification of endogenous cellular enzymes (column 4, lines 1-5) and Chen *et al* disclose that Listeria spp. (e.g. Listeria monocytogenes) possess β-glucosidase activity (column 11, lines 17-18) that can be detected using a β-glucosidase substrates (column 3, lines 50-52). Therefore, since *Listeria spp* possess *β-glucosidase activity* that can be detected with a substrate (Chen *et al*) and the *β-glucosidase activity* can be detected with high sensitivity using 1,2 dioxetane substrate (Brostein *et al*), one of ordinary skill in the art would obviously try to improve the detection sensitivity of the bound listeria cell of Basbøll *et al* using the teaching of Brostein *et al* and Chen *et al* because Basbøll *et al* envisioned detection directly on the solid phase (Basbøll *et al*; column 3, lines 49-55) and Bronstein *et al* disclose that the chemiluminescent 1,2 dioxetane substrate provides high sensitivity in chemiluminescent detection (column 1, lines 50-53) and

the chemiluminescent assay provides superior alternative to traditional calorimetric, fluorescent and radioisotopic detention methods (column 1, lines 53-56).

Further, prior art is not limited just to the references being applied, but includes the understanding of one of ordinary skill in the art. The prior art reference (or references when combined) need not teach or suggest all the claim limitations. The "mere existence of differences between the prior art and an invention does not establish the invention's nonobviousness." The gap between the prior art and the claimed invention may not be "so great as to render the [claim] nonobvious to one reasonably skilled in the art." In determining obviousness, neither the particular motivation to make the claimed invention nor the problem the inventor is solving controls. The proper analysis is whether the claimed invention would have been obvious to one of ordinary skill in the art after consideration of all the facts. Factors other than the disclosures of the cited prior art may provide a basis for concluding that it would have been obvious to one of ordinary skill in the art to bridge the gap. The teaching, suggestion, or motivation test is flexible and an explicit suggestion to combine the prior art is not necessary. The motivation to combine may be implicit and may be found in the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved. "[A]n implicit motivation to combine exists not only when a suggestion may be gleaned from the prior art as a whole, but when the 'improvement' is technology-independent and the combination of references results in a product or process that is more desirable, for example

because it is stronger, cheaper, cleaner, faster, lighter, smaller, more durable, or more efficient.

Conclusion

8. Applicants' amendment necessitated new ground(s) of rejection presented in this office action. Accordingly, **THIS ACTION IS MADE FINAL**. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

If Applicants should amend the claims, a complete and responsive reply will clearly identify where support can be found in the disclosure for each amendment. Applicant should point to the page and line numbers of the application corresponding to each amendment, and provide any statements that might help to identify support for the claimed invention (e.g., if the amendment is not supported in ipsis verbis, clarification on the record may be helpful). Should Applicants present new claims, Applicants should clearly identify where support can be found in the disclosure.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shafiqul Haq whose telephone number is 571-272-6103. The examiner can normally be reached on 7:30AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark L. Shibuya can be reached on 571-272-0806. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Shafiqul Haq/
Examiner, Art Unit 1641

/Mark L. Shibuya/
Supervisory Patent Examiner, Art Unit 1641